

REMARKS/ARGUMENTS

Claims 1 and 11 have been canceled, and new claims 19 and 20 have been added. Claims 2, 3, 5, 6, 10, 12 and 14 have been amended.

Claims 1 and 6–9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama (U.S. Patent No. 5,493,604 A) in view of Azartash et al. (WO 9921343 A1) and further view of Takahashi (JP 411027352A) and Takagi et al. (U.S. Patent No. 5,235,656 A). Claim 1 has been canceled and new claim 19 has been added. For at least the following reasons, the Examiner’s rejection is respectfully traversed.

None of the references disclose or suggest “wherein a flexible board is arranged and accommodated inside said lower case, and components corresponding to the key operation section and the battery are mounted on said flexible board” as recited in claim 19.

Hirayama, Azartash, and Takahashi do not disclose or suggest a flexible board is inside the lower case.

Takagi also does not overcome the deficiencies of Harayama. Takagi merely discloses a single case for the phone. In Takagi, a printed circuit board 22 is located beneath a flexible printed board 8. The Takagi flexible printed circuit board 8 has a membrane switch portion and a LCD, and the Takagi printed circuit board 22 has logic circuit parts mounted on an upper side and electronic parts of a transmitter and receiver mounted on a lower side (col. 3, lines 37-54).

Since Takagi only discloses a single case for the phone, Takagi fails to disclose or suggest a flexible board inside a lower case. Since Takagi only discloses a switch portion and a LCD on the flexible printed circuit board, Takagi also fails to disclose or suggest a component corresponding to a battery is mounted on the flexible board. Therefore, Takagi fails to disclose or suggest a flexible board inside a lower case, and a component corresponding to the battery is

mounted on the flexible board. Thus, even if combined, the references do not disclose or suggest all the elements of the claimed invention.

Further with regard to claim 19, none of the references disclose or suggest “wherein components corresponding to a battery terminal, a microphone, a key diaphragm, and a LED for key display are all mounted on one surface of said flexible board; and portion of said flexible board, on which at least one of the components corresponding to the battery terminal, the microphone, the key diaphragm, and the LED is mounted, is folded along a folding portion when said flexible board is arranged in the lower case” as recited in claim 19.

As mentioned previously, Hirayama, Azartash, and Takahashi do not disclose or suggest a flexible board is inside the lower case. Since Takagi only discloses a single case for the phone, Takagi also fails to disclose or suggest a flexible board arranged inside a lower case.

Additionally, although Takagi discloses a switch portion 20 provided with switch disks 16 and LEDs 20, the portions of the flexible printed circuit board on which the switch disks 16 and LEDs 20 are mounted are not folded along a folded portion. Therefore, Takagi also fails to disclose or suggest a portion of the flexible board, on which at least one of the components corresponding to the battery terminal, the microphone, the key diaphragm, and the LED is mounted, is folded along a folding portion when the flexible board is arranged in the lower case. Thus, even if combined, the references do not disclose or suggest all the elements of the claimed invention.

Furthermore, there is no suggestion or motivation for one skilled in the art at the time the invention was made to combine Azartash, Takahashi, and Takagi with Hirayama to arrive at the claimed invention. The mere fact that the references can be combined does not render the

resultant combination obvious unless the prior art also suggests the desirability of the combination.

Hirayama merely discloses what is located on the outside surfaces of an upper case and a lower case (col. 2, lines 18-31; Figs. 1A-1B). Azartash teaches a foldable phone that has the phone electronics provided on *a printed wiring board 29 located beneath a keyboard 18* in the base case, while the cover case is formed as a thin plastic piece that houses either the ear piece and a vibrator (page 3, lines 4-22; Fig. 2) or the microphone (page 4, lines 8-18; Fig. 5). Therefore, the combination of Hirayama and Azartash would at most only teach the phone electronics provided on a hard board beneath the keyboard inside one case and no board inside the other case.

Takahashi discloses a foldable phone with a circuit for suppressing power consumption based on the open/closed state of the phone, and the circuit is on *a processing circuit board 19 located beneath a keyboard 13* in an upper case (Abstract, Fig. 1). Since the processing circuit board located beneath the keyboard, the combination of Takahashi with Hirayama and Azartash would still at most only teach the phone electronics provided on a hard board beneath the keyboard inside one case and no board inside the other case.

Takagi merely discloses a phone with *a single case* that has *a printed circuit board 22 located beneath a flexible printed board 8* (col. 3, lines 37-54; Fig. 3). In Takagi, the flexible printed circuit board 8 has a membrane switch portion and a LCD, and the printed circuit board 22 has logic circuit parts mounted on an upper side and electronic parts of a transmitter and receiver mounted on a lower side. Since the Takagi printed circuit board is located beneath the flexible printed board, the combination of Takagi with Hirayama, Azartash, and Takahzshi

would at most teach the phone electronics provided on a hard board located beneath a flexible board with a switch portion and LCD inside one case, and no board inside the other case.

There is no motivation or suggestion in Hirayama, Azartash, Takahzshi, or Takagi to have a hard board inside one case and a flexible board inside the other case. There is also no motivation or suggestion in Hirayama, Azartash, Takahzshi, or Takagi to replace a hard board with a flexible board inside a case. Therefore, there is no suggestion or motivation in Hirayama, Azartash, Takahzshi or Takagi to look at or use the flexible printed board of Takagi to arrive at the claimed invention.

The desirability of such a modification is found only in Applicant's own description of the invention, in contrast to the requirement that the teaching or suggestion to make the modification must be found in the prior art, and not based on an Applicant's disclosure. Reconsideration and withdrawal of the rejection based upon the combination of references is respectfully requested.

Claim 3 is rejected under 35 U.S. 103(a) as being unpatentable over Hirayama in view of Azartash, Takahashi and Takagi, and further in view of Hitachi. For at least the following reasons, the Examiner's rejection is respectfully traversed.

There is no suggestion or motivation for one skilled in the art at the time the invention was made to combine Azartash, Takahashi, Takagi and Hitachi with Hirayama to arrive at the claimed invention. The mere fact that the references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

As mentioned previously for claim 19, Azartash teaches a foldable phone that has the phone electronics provided on a printed wiring board 29 located beneath a keyboard 18 in the

base case, while the cover case is formed as a thin plastic piece that houses either the ear piece or the microphone. Takahashi teaches a foldable phone with a processing circuit board 19 located beneath a keyboard 13 in an upper case. Takagi teaches a phone with a single case having a printed circuit board 22 is located beneath the flexible printed board 8, which has a switch portion and LCD. Therefore, the combination of Takagi with Hirayama, Azartash, and Takahzshi would at most teach the phone electronics provided on a hard board located beneath a flexible board with a switch portion and LCD inside one case, and no board inside the other case.

Hitachi merely discloses a hinge part 10 composed of an FPC board 12 that electrically connects a printed wired board 13 in housing 1 with a printed wired board 13 in housing 2 (Abstract, Figs. 6-8).

There is no motivation or suggestion in Hirayma, Azartash, Takahzshi, Takagi, or Hitachi to replace a hard board with a flexible board inside a case. There is also no motivation or suggestion in Hirayma, Azartash, Takahzshi, Takagi, or Hitachi to extend a flexible board from one case through a hinge portion. Therefore, there is no suggestion or motivation in Hirayma, Azartash, Takahzshi, Takagi, or Hitachi to look at or use the flexible printed board of Hitachi to arrive at the claimed invention.

The desirability of such a modification is found only in Applicant's own description of the invention, in contrast to the requirement that the teaching or suggestion to make the modification must be found in the prior art, and not based on an Applicant's disclosure. Reconsideration and withdrawal of the rejection based upon the combination of references is respectfully requested.

Claim 11 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama, in view of Weisshappel et al. (U.S. Patent No. 5,857,148), and further in view of Tamura (JP

406224816), Takahashi and Takagi et al. Claim 11 has been canceled, and claim 20 has been added. For at least the following reasons, the Examiner's rejection is respectfully traversed.

None of the reference disclose or suggest, "wherein a flexible board is arranged and accommodated inside said lower case, and components corresponding to the key operation section, the I/O connector, the vibrator and the battery are mounted on said flexible board" as recited in claim 20.

Hirayama, Weisshappel, Tamura, and Takahashi do not disclose or suggest a flexible board is inside the lower case. Takagi also does not overcome the deficiencies of Harayama. Takagi merely discloses a single case for the phone. In Takagi, a printed circuit board 22 is located beneath a flexible printed board 8. The Takagi flexible printed circuit board 8 has a membrane switch portion and a LCD, and the Takagi printed circuit board 22 has logic circuit parts mounted on an upper side and electronic parts of a transmitter and receiver mounted on a lower side (col. 3, lines 37-54).

Since Takagi only discloses a single case for the phone, Takagi fails to disclose or suggest a flexible board inside a lower case. Since Takagi only discloses a switch portion and a LCD on the flexible printed circuit board, Takagi also fails to disclose or suggest components corresponding to a I/O connector, a vibrator, and a battery are mounted on the flexible board. Therefore, Takagi fails to disclose or suggest a flexible board inside a lower case, and components corresponding to an I/O connector, a vibrator, and a battery are mounted on the flexible board. Thus, even if combined, the references do not disclose or suggest all the elements of the claimed invention.

Further with regards to claim 20, none of the references disclose or suggest "wherein at components corresponding to a battery terminal, the vibrator, a microphone, a buzzer, a key

diaphragm, and a LED for key display are all mounted on one surface of said flexible board; and a portion of said flexible board, on which at least one of the components corresponding to the battery terminal, the vibrator, the microphone, the buzzer, the key diaphragm, and the LED is mounted, is folded along a folded portion when said flexible board is arranged in the lower case” as recited in claim 20.

As mentioned previously, Hirayama, Weisshappel, Tamura, and Takahashi do not disclose or suggest a flexible board is inside the lower case. Since Takagi only discloses a single case for the phone, Takagi also fails to disclose or suggest a flexible board arranged inside a lower case.

Additionally, although Takagi discloses a switch portion 20 provided with switch disks 16 and LEDs 20, the portions of the flexible printed circuit board on which the switch disks 16 and LEDs 20 are mounted are not folded along a folded portion. Therefore, Takagi also fails to disclose or suggest a portion of the flexible board, on which at least one the components corresponding to the battery terminal, the vibrator, the microphone, the buzzer, the key diaphragm, and the LED is mounted, is folded along a folding portion when said flexible board is arranged in the lower case. Thus, even if combined, the references do not disclose or suggest all the elements of the claimed invention.

Furthermore, there is no suggestion or motivation for one skilled in the art at the time the invention was made to combine Weisshappel, Tamura, and Takahashi, and Takagi with Hirayama to arrive at the claimed invention. The mere fact that the references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

Hirayama merely discloses what is located on the outside surfaces of an upper case and a lower case (col. 2, lines 18-31; Figs. 1A-1B). Weissappel discloses a foldable phone that has a transceiver board 700 located beneath the keyboard 130 in a lower case (col. 11, lines 5-34; Fig. 7). Tamura discloses foldable phone with a radio transceiver 5 is located beneath the keyboard in an upper case (Abstract; Figs. a-b). Takahashi discloses a foldable phone with a circuit for suppressing power consumption based on the open/closed state of the phone, and the circuit is on a processing circuit board 19 located beneath a keyboard 13 in an upper case (Abstract, Fig. 1). Therefore, the combination of Weissappel, Tamura, Takahashi with Hirayama would at most only teach a hard board beneath the keyboard inside one case and no board inside the other case.

Takagi merely discloses a phone with single case that has a printed circuit board 22 located beneath a flexible printed board 8 (col. 3, lines 37-54; Fig. 3). In Takagi, the flexible printed circuit board 8 has a membrane switch portion and a LCD, and the printed circuit board 22 has logic circuit parts mounted on an upper side and electronic parts of a transmitter and receiver mounted on a lower side. Since the Takagi printed circuit board is located beneath the flexible printed board, the combination of Takagi with Weissappel, Tamura, Takahashi with Hirayama would still at most teach the phone electronics provided on a hard board located beneath a flexible board with a switch portion and LCD inside one case, and no board inside the other case.

There is no motivation or suggestion in Hirayama, Weissappel, Tamura, Takahashi, or Takagi to have a hard board inside one case and a flexible board inside the other case. There is also no motivation or suggestion in Hirayama, Weissappel, Tamura, Takahashi, or Takagi to replace a hard board with a flexible board inside a case. Therefore, there is no suggestion or

motivation in Hirayama, Weisshappel, Tamura, Takahashi, or Takagi to look at or use the flexible printed board of Takagi to arrive at the claimed invention.

The desirability of such a modification is found only in Applicant's own description of the invention, in contrast to the requirement that the teaching or suggestion to make the modification must be found in the prior art, and not based on an Applicant's disclosure. Reconsideration and withdrawal of the rejection based upon the combination of references is respectfully requested.

Claim 12 is rejected under 35 U.S. 103(a) as being unpatentable over Hirayama in view of Weisshappel, Tamura, Takahashi, or Takagi, and further in view of Hitachi document. For at least the following reasons, the Examiner's rejection is respectfully traversed.

There is no suggestion or motivation for one skilled in the art at the time the invention was made to combine Weisshappel, Tamura, Takahashi, Takagi and Hitachi with Hirayama to arrive at the claimed invention. The mere fact that the references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

As mentioned previously for claim 20, Weisshappel discloses a foldable phone that has a transceiver board 700 located beneath the keyboard 130 in a lower case. Tamura discloses foldable phone with a radio transceiver 5 is located beneath the keyboard in an upper case. Takahashi teaches a foldable phone with a processing circuit board 19 located beneath a keyboard 13 in an upper case. Takagi teaches a phone with a single case having a printed circuit board 22 is located beneath the flexible printed board 8, which has a switch portion and LCD. Therefore, the combination of Takagi with Hirayama, Weisshappel, Tamura, and Takahashi

would at most only teach the phone electronics provided on a hard board located beneath a flexible board with a switch portion and LCD inside one case, and no board inside the other case.

Hitachi merely discloses a hinge part 10 composed of an FPC board 12 that electrically connects a printed wired board 13 in housing 1 with a printed wired board 13 in housing 2 (Abstract, Figs. 6-8).

There is no motivation or suggestion in Hirayama, Weisshappel, Tamura, Takahashi, Takagi, or Hitachi to replace a hard board with a flexible board inside a case. There is also no motivation or suggestion in Hirayama, Weisshappel, Tamura, Takahashi, Takagi, or Hitachi to extend a flexible board from one case through a hinge portion. Therefore, there is no suggestion or motivation in Hirayama, Weisshappel, Tamura, Takahashi, Takagi, or Hitachi to look at or use the flexible printed board of Hitachi to arrive at the claimed invention.

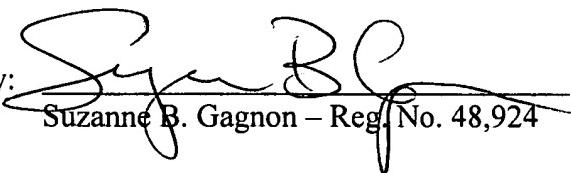
The desirability of such a modification is found only in Applicant's own description of the invention, in contrast to the requirement that the teaching or suggestion to make the modification must be found in the prior art, and not based on an Applicant's disclosure. Reconsideration and withdrawal of the rejection based upon the combination of references is respectfully requested.

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

Appln. No. 09/806,103
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If there are any additional fees resulting from this communication, please charge same to
our Deposit Account No. 16-0820, our Order No. 33388.

Respectfully submitted,
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